CLAIMS

    1.   A method for allocating orthogonal codes to users of mobile stations in a telecommunication system, the method comprising:

5   determining an effective number of mobile station users equal to the product of a number of active users in the system and a value relating to **F**;

    allocating sufficient orthogonal codes to service the effective number of users; and

10   transmitting for reception by at least one mobile station at least one message indicating the number of allocated orthogonal codes.

    2.   The method of Claim 1 wherein the step of 15 determining further comprises one of setting **F** to a predetermined value, or determining **F** with reference to management and control data concerning the system.

    3.   The method of Claim 1 wherein the number of 20 active users in the system is the optimal number of active users in the system.

    4.   The method of Claim 1 wherein the step of determining further comprises determining an optimal 25 number of active users in the system with reference to at least one of:

    the number of users requesting service;

    the throughput required of the system; and

    the type of service requested.

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5.   The method of Claim 1 wherein the step of determining further comprises determining an optimal number of active users in the system with reference to at least one of:

5   the number of users requesting service;

the throughput required of the system; and

the type of service requested, wherein the type of service includes at least one of http, ftp, e-mail, and streaming.

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6.   The method of Claim 1 wherein the step of allocating further comprises:

setting a variable N equal to at least 1;

determining the number of users that may be
15   supported by N channels;

determining whether the number of users that may be supported by N channels is greater than the effective number of users;

upon a determination that the number of users that
20   may be supported by N channels is not greater than the effective number of users, incrementing N by 1, and returning to the step of determining the number of users that may be supported by N channels; and

upon a determination that the number of users that
25   may be supported by N channels is greater than the effective number of users, allocating N channels for orthogonal codes.

7.   The method of Claim 1 wherein the orthogonal
30   codes are Walsh codes.

8. The method of Claim 1 wherein the system comprises at least a sector of a cell.

9. The method of Claim 1 applied to UMTS.

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10. A base station configured for allocating orthogonal codes, the base station comprising:

means for determining an effective number of users equal to the product of a number of active users in the

10 system and a value relating to **F**;

means for allocating sufficient orthogonal codes to service the effective number of users; and

means for transmitting for reception by at least one mobile station at least one message indicating the number

15 of allocated orthogonal codes.

11. The method of Claim 10 wherein the means for determining further comprises one of means for setting **F** to a predetermined value, or means for determining **F** with

20 reference to management and control data concerning the system.

12. The method of Claim 10 wherein the number of active users in the system is the optimal number of

25 active users in the system.

13. The method of Claim 10 wherein the means for determining further comprises means for determining an optimal number of active users in the system with

30 reference to at least one of:

the number of users requesting service;

the throughput required of the system; and

the type of service requested.

14. The method of Claim 10 wherein the means for determining further comprises means for determining an optimal number of active users in the system with reference to at least one of:

the number of users requesting service;

the throughput required of the system; and

the type of service requested, wherein the type of service includes at least one of http, ftp, e-mail, and streaming.

15. The method of Claim 10 wherein the means for allocating further comprises:

means for setting a variable N equal to at least 1;

means for determining the number of users that may be supported by N channels;

means for determining whether the number of users that may be supported by N channels is greater than the effective number of users;

means, upon a determination that the number of users that may be supported by N channels is not greater than the effective number of users, for incrementing N by 1, and returning to the means for determining the number of users that may be supported by N channels; and

means, upon a determination that the number of users that may be supported by N channels is greater than the effective number of users, for allocating N channels for orthogonal codes.

16.   The method of Claim 10 wherein the orthogonal codes are Walsh codes.

17.   The method of Claim 10 wherein the system is a
5   sector of a cell.

18.   The method of Claim 10 applied to UMTS.

19.   A   telecommunications   system   utilizing   a
10   computer program code for allocating orthogonal codes, the computer program product having a medium with a computer program embodied thereon, the telecommunications system comprising:

    a   digital   processor   for   executing   the   computer
15   program code stored on a medium, the computer program code executable by the digital processor to produce indications of an effective number of mobile station users in the telecommunications system, in relation to the product of a number of active users in the system and
20   a value relating to **F**;

    a base station for transmitting one or more messages to one or more mobile stations to allocate orthogonal codes in response to the indications of an effective number of mobile station users produced by the digital
25   processor.

20.   The telecommunications system of Claim 19 wherein **F** is one or both of a predetermined value and a value determined with reference to management and control
30   data concerning the system.

21. The telecommunications system of Claim 19 wherein the number of active users in the system is the optimal number of active users in the system.

5   22. The telecommunications system of Claim 19 wherein the computer program code further comprises computer program code for determining an optimal number of active users in the system with reference to at least one of:

10   the number of users requesting service;
            the throughput required of the system; and
            the type of service requested.

        23. The telecommunications system of Claim 19

15 wherein the computer program code further comprises computer program code for determining an optimal number of active users in the system with reference to at least one of:
            the number of users requesting service;

20   the throughput required of the system; and
            the type of service requested, wherein the type of service includes at least one of http, ftp, e-mail, and streaming.

25   24. The telecommunications system of Claim 19 wherein the computer program code further comprises:
            computer program code for setting a variable N equal to at least 1;
            computer program code for determining the number of

30 users that may be supported by N channels;

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computer program code for determining whether the number of users that may be supported by N channels is greater than the effective number of users;

computer program code, upon a determination that the number of users that may be supported by N channels is not greater than the effective number of users, for incrementing N by 1, and returning to the computer program code for determining the number of users that may be supported by N channels; and

computer program code, upon a determination that the number of users that may be supported by N channels is greater than the effective number of users, for allocating N channels for orthogonal codes.

25. The telecommunications system of Claim 19 wherein the orthogonal codes are Walsh codes.

26. The telecommunications system of Claim 19 wherein the system is a sector of a cell.

27. The telecommunications system of Claim 19 applied to UMTS.